

[Aug 13, 1914]

WORK OF THE ROCKEFELLER SANITARY COMMISSION

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I. THE WORK UNDERTAKEN.--In the autumn of 1909 Mr. John D. Rockefeller gave the sum of \$1,000,000 to be used during the period of five years toward the eradication of hookworm disease in the Southern states. For the administration of this fund the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease was organized October 26, 1909. An Administrative Secretary was appointed in December; on January 8, 1910 offices were opened in Washington, D. C. and the more definite organization of the work was begun. Now that this five year period is drawing to a close it would seem advisable that we take stock of our progress in order to see what part of our task has been accomplished and what part of it remains to be done.

The purpose for which the fund was given and the Commission created was the eradication of hookworm disease in the Southern states. In the administration of the work it has been assumed that the completion of this task is a work which the Commission should not undertake; that if the infection is to be stamped out the states in which it exists must in the end assume the responsibility; that the Commission could be helpful only in so far as it could aid the states in organizing their own forces and directing them to the work to be done*.

To this end we have entered into cooperation with eleven states; and for a given state our service has undertaken to do the following definite things:

* See Report of the Administrative Secretary, 1910, page 4.

1. To demonstrate to the people of that state that hookworm disease is a reality; that it is a serious handicap; that it is curable and preventable.

2. To make an infection survey that will give a reliable estimate of the degree of infection for each county in the state; and to exhibit this result on a state map.

3. To make a sanitary survey which shall show for each county in the state the condition of soil pollution which is responsible for the presence and spread of the infection; and to exhibit the results of this survey on a state map.

4. To conduct an intensive educational campaign in each county where the infection is sufficiently severe to justify the effort; to teach the people by means of the printed page, by lecture, by exhibit, by demonstration the importance to the community of getting every person examined and getting the infected treated; to teach them how the examination is made, how the disease is treated, how the infection is spread and how it can be prevented.

5. To teach the practicing physicians of the state how to diagnose the disease and how to treat it; to teach them the importance of making examinations for intestinal parasites a regular part of routine examination of all patients.

6. To get every medical school in the state to make provision for the definite instruction in the diagnosis and treatment of intestinal parasites to be given to all students as a requirement for graduation.

7. To enlist the press of the state in the work.
8. To see that the teaching of the dangers of soil pollution and how to prevent soil pollution is made a regular part of the instruction given in the public schools of the state.
9. To make definite, measurable, reduction in the degree of infection for the heavily infected counties; to make definite, measurable increase in the sanitary index of these counties.
10. To make at least one complete community demonstration; to select a rural community where the infection is reasonably heavy, take a census of its population, map it, photograph conditions; then get every person examined, get every infected person cured, get soil pollution stopped; photograph again. Then tell the people of the state the story of how this one community has eradicated hookworm infection.
11. And if possible ~~the~~ help lay the foundation of a state and local health service that will in the end take care of hookworm infection and all other preventable diseases*.

* See circular letter to State Directors, No. 135, June 14, 1913.

II. WHAT HAS BEEN ACCOMPLISHED.--Of the plan of work as here outlined the following is a summary of what had been accomplished up to June 30, 1914:

1. The work of demonstrating to the people of these eleven states that hookworm is a reality, that it is a serious menace to health and working efficiency, that it can be cured and prevented may be said to have been accomplished. When our work began in 1910 comparatively few physicians had a knowledge of the disease, and it was exceptional to find one acquainted with its prevalence in his practice and active in its recognition and cure. Most laymen had not heard of it. The mind of the reading public was confused by the conflicting opinions advanced by physicians and newspapers. To some it was a myth conceived by malevolent designers; to a small minority it was a newly discovered disease of great importance. One may still find individuals here and there who do not take the disease very seriously; but the Commission may regard this part of its work as done. The medical profession and the public generally recognize the prevalence of hookworm disease and regard its cure and prevention as an essential part of public health work in the South.

2. The work of making the infection survey to give a reliable estimate of the degree of infection for each county in these eleven states and to exhibit this result for each state on a state map, has made satisfactory progress but has not been completed. The presence of infection has been demonstrated in practically every county in these states with the exception of the western three-fourths of Texas.

Infection has been demonstrated also in a large number of counties in adjacent states. A definite infection survey, based on microscopic examination of stools to determine the degree of infection has been completed in 488 of the 968 counties in this territory. The average number of rural school children examined per county in this survey is 1,017; the total number examined up to June 30th is 446,449;

<u>State</u>	<u>No. of Counties in the State</u>	<u>No. of Counties Surveyed</u>
Alabama	67	29
Arkansas	75	32
Georgia	148	42
Kentucky	120	22
Louisiana	64	48
Mississippi	79	65
North Carolina	100	99
South Carolina	44	30
Tennessee	96	41
*Texas	75	33
Virginia	100	47
Total,	968	488

* Only 75 of the 249 counties of Texas are counted in the infected area.

3. The sanitary survey to determine for each county the condition of soil pollution which is responsible for the presence and spread of the infection has been in progress for about three years. This survey has involved the inspection of 216,568 rural homes and up to June 30th had been completed for 564 counties:

<u>State</u>	<u>No. of Counties in the State</u>	<u>No. of Counties Surveyed</u>
Alabama	67	39
Arkansas	75	38
Georgia	148	55
Kentucky	120	30
Louisiana	64	49
Mississippi	79	69
North Carolina	100	99
South Carolina	44	39
Tennessee	96	46
*Texas	75	33
Virginia	100	67
Total,	968	564

* Only 75 of the 249 counties of Texas are counted in the infected area.

4. The intensive educational work as outlined above under heading "4" has been completed in more than half of the counties in these states. The work has centered around dispensaries conducted for the free examination and the free treatment of all persons applying for it. The dispensaries are widely distributed at five or more points in the county, and on one day of each week for five successive weeks, or longer, free clinics are held at each dispensary point. The people have taken advantage of this opportunity. They have been urged to do so by the press, by the practicing physicians, the teachers, and influential citizens, who themselves, when inspired by our directors, have set an example by having themselves examined.

These dispensary campaigns have been financed in part with funds appropriated by the counties and used for paying one or more of the following items of local expenses:

1. Cost of containers
2. Cost of drugs
3. Cost for advertising matter and its distribution
4. Travelling expenses of microscopists

As a means for educating the people, and getting them out to hear lectures, to see demonstrations, to carry literature home, to be examined and, where infected, to receive treatment, the county dispensary has proven a gratifying success. Since 1911, when the first one was opened, the Commission's staff has conducted 517 dispensary campaigns, microscopically examined 892,765 persons, and treated 382,129 persons, who were found infected. In many counties from 25 to 50 percent of the entire population has been microscopically examined.

The dispensary work is nearing completion in three States, and is well advanced in the other States. The progress by States is shown in the following table:

State	No. of Counties in the State	Number of Counties Having Dispensary Campaigns		
		First	Second	Total
Alabama	67	41	1	42
Arkansas	75	26	1	27
Georgia	148	52	1	53
Kentucky	120	23	1	24
Louisiana	64	43	2	45
Mississippi	79	67	2	69
North Carolina	100	99	7	106
South Carolina	44	40	12	52
Tennessee	96	35	0	35
*Texas	75	33	0	33
Virginia	100	31	0	31
Total,	968	490	27	517

* Only 75 of the 249 counties of Texas are counted in the infected area.

5. It may be stated as a general proposition that the medical profession has been well informed as to the existence, prevalence, and importance of hookworm disease; the technique for its recognition; and the methods for its treatment. The physicians have received pamphlets and bulletins on the disease sent out by the State Boards of Health. Medical journals have published treatises on the disease. The State Directors have addressed letters, inquiries, and literature to them; and lectured before their meetings. Many thousands of them have been visited by the field directors. Probably one-half of them live in counties where dispensary campaigns have been conducted. For about half the States, it may be said that the Commission has completed the work undertaken with the physicians.

A very large number of the physicians have been responsive. They have welcomed the work of the State and Field Directors, and have generously contributed their time and influence to its success. Yet the profession as a whole is not doing all that one might expect in combatting the disease. Many physicians, probably the majority of them, understand the importance of making examinations for intestinal parasites a regular part of routine examination of all patients; but it cannot be said of the profession as a whole in these states that this has become a regular practice. The doctors are careless in looking for the infection; in treating cases; and in advising, or even themselves adopting, precautionary measures against the disease, they are careless and unresponsive in reporting the work they really do.

The following table gives a general idea of the work accomplished by

the practicing physicians, though its value has been limited by a lack of uniformity in collecting the information in the States:

WORK OF PRACTICING PHYSICIANS

<u>State</u>	<u>No. in State</u>	<u>Number Reporting</u>	<u>No. Reporting "Treating Hookworm".</u>	<u>No. Persons Reported treated by Physicians</u>
Ala.	2350	8141
Ark.	3200	1158	547	3443
Ga.	3255	...	1400	19848
Ky.	3300	2214	1729	56740
La.	2039	1502	543	13149
Miss.	1783	1210	827	31618
N.C.	1762	1414	1038	57236
S.C.	1450	886	574	12926
Tenn.	3400	...	715	1655
Texas	2410*	1455	562	5098
Va.	2357	51	22	7503
Total,	27306	9890	7957	217357

* Includes eastern one-third of Texas only.

6. The work of getting the medical schools in each state to make provision for instruction in the diagnosis and treatment of intestinal parasites to be given to all students as a requirement for graduation has made good progress and has probably been carried as far as present conditions in these schools warrant.

A survey has been made of the medical schools of the South, including those giving only the first two years of the course and those granting degrees, to ascertain what work is being done in this subject. When the survey was made (1912) there were 29 medical colleges, three of which were for colored students. Twenty-two of these reported that specific clinical lectures and clinical instruction were given in hookworm disease. In two schools incidental instruction was given: reports were not received

from five schools. In the larger schools the work was thorough. Tulane University has adopted a high standard in this particular. The following statement is extracted from the report:

"Students in the junior year practice the laboratory diagnosis of hookworm disease and other intestinal parasites for ten or twelve hours. These students are thoroughly drilled in the technique, and required to make diagnosis on a large number of specimens. They also learn the centrifuge method at this time. The practise is so extensive that practically every student is capable of making an infallible diagnosis as to the presence or absence of hookworm infection.

"In the senior year the students make practical diagnoses of all cases which occur in their service during one-half the term. It is probable that each student performs diagnoses upon from ten to fifty cases of intestinal parasites. In the didactic lectures, two lectures of one hour each are given, in which general symptomatology and the treatment of the disease are thoroughly discussed. In the clinics each student sees from a few up to thirty or forty cases, perhaps, under treatment in his service during the session. It is seldom, however, that a student does not have one or more cases of hookworm disease assigned to him for diagnosis, and to be watched and treated. The fundamental principles of prevention are thoroughly explained both in the didactic lecture and in the lecture introductory to the laboratory diagnosis."

7. The work of enlisting the press has been done, and well done. The newspapers, early in 1910, delighted in discussions of the hookworm, "the lazy germ," "the hookworm theory," "the fad," "the myth," "the conception of ingenious minds for the injury of the South." Some of them denounced the assertion that such a disease existed at all. They were particularly bitter in disclaiming its existence in the South. Very few papers could be said to be friendly, or active in aiding to launch the work undertaken by the Commission.

The work began. As definite progress in locating and treating infected persons advanced, the results were investigated by the papers. One by one their attitude changed. Seriousness was in evidence in the

statements they published. They got behind the directors, and aided in educating the public to lend its cooperation to the work. Without exception, so far as we know, they recognize the importance of the disease, and are contributing space in their columns to the propaganda for its relief and control.

8. In getting the teaching of the dangers of soil pollution and how to prevent soil pollution made a regular part of the instruction given in the public schools of each state, gratifying progress has been made; but the task has not been completed. The educational departments of state and county have been the strongest possible allies in the work. The state superintendents of education in some of the states have aided in the passage of laws for better sanitary conditions at the schools. Bulletins on hookworm disease have been published and distributed by State Directors of education. These departments have also sent out large numbers of letters to county officials and to teachers urging their cooperation in the work. County boards of education have, in many instances, given financial aid to the work. In a large number of counties the superintendents have visited the schools with Field Directors and have aided in getting the cooperation of teachers and in getting the pupils examined and treated. The teachers themselves have been the most active and effective allies which the Field Directors have found in the work.

Laws requiring the building and use of sanitary privies at all the public schools have been enacted and are being enforced in Virginia and Louisiana. In North Carolina no new schoolhouse is accepted by the

state department until it has been provided with sanitary privies. In many of the states sanitary privies, by the protection of the children and as andemonstration to the community, are being built at the school-houses by action of county boards.

Definite instruction on the subject of hookworm disease and the dangers and prevention of soil pollution, has been made a part of the school course in Virginia, North Carolina, South Carolina, Georgia, Alabama, Louisiana, Texas, and Kentucky. In Virginia, North Carolina, Alabama, and Kentucky the text book has been supplemented by bulletins, leaflets, or catechisms especially prepared by the State Directors of our service. In some of the states, like Tennessee, Mississippi, and Arkansas, instruction on sanitation is given by means of health days, lectures, and literature under the direction of the school leagues. It remains only to continue the work of all these agencies until all the states have made definite instruction in these subjects a regular part of the school program.

9. The work as outlined above under headings "9" and "10" is now in its initial stage. So little that is definite and measurable has been accomplished as yet that these two lines of work may be regarded as work yet to be done. In building up state and local departments of health definite results have been accomplished; but this, too, will be summarized in connection with the statement of work to be done.

III. WORK TO BE DONE.--

1. Infection surveys are yet to be made in 480 counties:

<u>State</u>	<u>No. of Counties in the State</u>	<u>No. of Counties to be Surveyed</u>
Alabama	67	38
Arkansas	75	43
Georgia	148	106
Kentucky	120	98
Louisiana	64	16
Mississippi	79	14
North Carolina	100	1
South Carolina	44	14
Tennessee	96	55
Texas	75	42
Virginia	100	53
Total,	968	480

2. Sanitary surveys are yet to be made in 404 counties:

<u>State</u>	<u>No. of Counties in the State</u>	<u>No. of Counties to be Surveyed</u>
Alabama	67	28
Arkansas	75	37
Georgia	148	93
Kentucky	120	90
Louisiana	64	15
Mississippi	79	10
North Carolina	100	1
South Carolina	44	5
Tennessee	96	50
Texas	75	42
Virginia	100	33
Total,	968	404

3. There remain 478 counties in which the dispensary work has not been done. In many of these counties infection is too light to justify the effort; just how many it is impossible to say in advance.

In many counties where the infection is light this educational campaign is well worth while. It centers attention on the importance of sanitary measures and in many cases leads the counties to provide funds for improving sanitary conditions. For example, in Rowan and Rockingham Counties, North Carolina, where the infection was very light, provision has been made since the dispensary campaign for the employment of whole time county health officers on salaries of \$2500 with additional expense allowance. The full value of the work is in no case reflected in the number of persons treated. The treating of cases from the beginning of the work has been regarded as a means to a larger end, that of educating the people. Discretion will be exercised by the man on the ground as to which counties should be omitted from the dispensary work:

<u>State</u>	<u>No. of Counties in the State</u>	<u>No. of Counties to be Surveyed</u>
Alabama	67	26
Arkansas	75	49
Georgia	148	96
Kentucky	120	97
Louisiana	64	21
Mississippi	79	12
North Carolina	100	1
South Carolina	44	4
Tennessee	96	61
Texas	75	42
Virginia	100	69
Total,	968	478

4. There is work yet to be done in some of the states with the physicians. Plans for more active measures have been recently adopted in South Carolina, Georgia, Alabama, Louisiana, Arkansas, and Texas. These plans, it is hoped, will strengthen this features of the work in

these states.

5. Of the work with the schools, gratifying as the progress has been, much remains to be done. Effort should continue until the teaching of the dangers and prevention of soil pollution has been more thorough and effective in the eight states that have made it a part of the course and until the other three states have included this instruction in the school program.

Effort should continue until every schoolhouse in these states has been supplied with sanitary privies and the result made permanent by legislative requirement. The school should cease to serve as the center for the spread of infection. Instead of spreading infection it should become a model in preventing soil pollution. A few schools have now reached this standard, but generally speaking it remains for our service to demonstrate what can be done in this direction by intensive effort in given localities. With the standard thoroughly established by telling demonstrations we may confidently expect to see the work carried forward by permanent school and health agencies.

6. We are now prepared to take up the work of making definite measurable reduction in the degree of infection for the heavily infected counties, and of making definite measurable increase in the sanitary index of these counties. This we propose to do by intensive community work.

The county dispensary with its hurried six week's campaign has served its purpose. It was intended as a rallying point to which people could be brought to hear lectures; to see exhibits of hookworms and

photographs; to see the microscope at work in recognizing hookworm infection; to see the method followed in treating cases; to receive literature; and, as a result of treatment there given, to see a sufficient number of improved cases to convince them that the disease exists, that it is a serious menace, and that they should adopt measures for combatting it. The dispensary is an educational agency; it was not expected, by the plan of work here followed, to secure a measurable reduction in the degree of infection. Large numbers of people have been treated at the dispensaries and the degree of infection has doubtless been reduced, but it would not be possible to measure this reduction in a way that would carry conviction.

The dispensary work has resulted also in the building of many privies at schools and at farm homes. The sanitary index has thus been raised in many counties, but it would not be possible to measure this increase in sanitary index in a way that would be convincing.

The county dispensary work is now coming to a close in a number of states. We and the State Directors are convinced that conditions are now favorable for undertaking complete community demonstrations after the order of the demonstration which is being made in British Guiana. This work will be more difficult than the type of work which we have been doing. It will put to the test the patience, tact, and ability of our best men, but we have reason to believe that it can be done.

In one small community in British Guiana the map was made; the census was taken; all persons on this census roll with the possible ex-

ception of 3 have been examined; and every person found infected except 2 has been treated. We undertook a similar examination on Knotts Island off the east coast of North Carolina. All the 560 persons living on the island were examined. Every person found infected has been treated, and treated until cured. Satisfactory progress in sanitation is being made in the community in British Guiana, and in five communities in Virginia and North Carolina it has been demonstrated within the past two months that it is possible to get the people of three races to build and use sanitary privies.

7. Along with this demonstration work in communities the Commission should aid in the development of state and local health agencies which may be depended upon finally to take over the completion of the task which the Commission's demonstration will, we trust, indicate to be a feasible undertaking. Work already done shows that it is possible to have counties provide for whole time health officers. As a by-product of the Commission's work twelve counties in three states have provided for whole time county health officers with salaries ranging from \$2,000 to \$2,500 with additional expense allowance. The extension of this movement with adequate provision for its efficient organization and supervision presents an opportunity for definite and lasting service. It is not desired, however, that immediate consideration be given to this phase of the work.